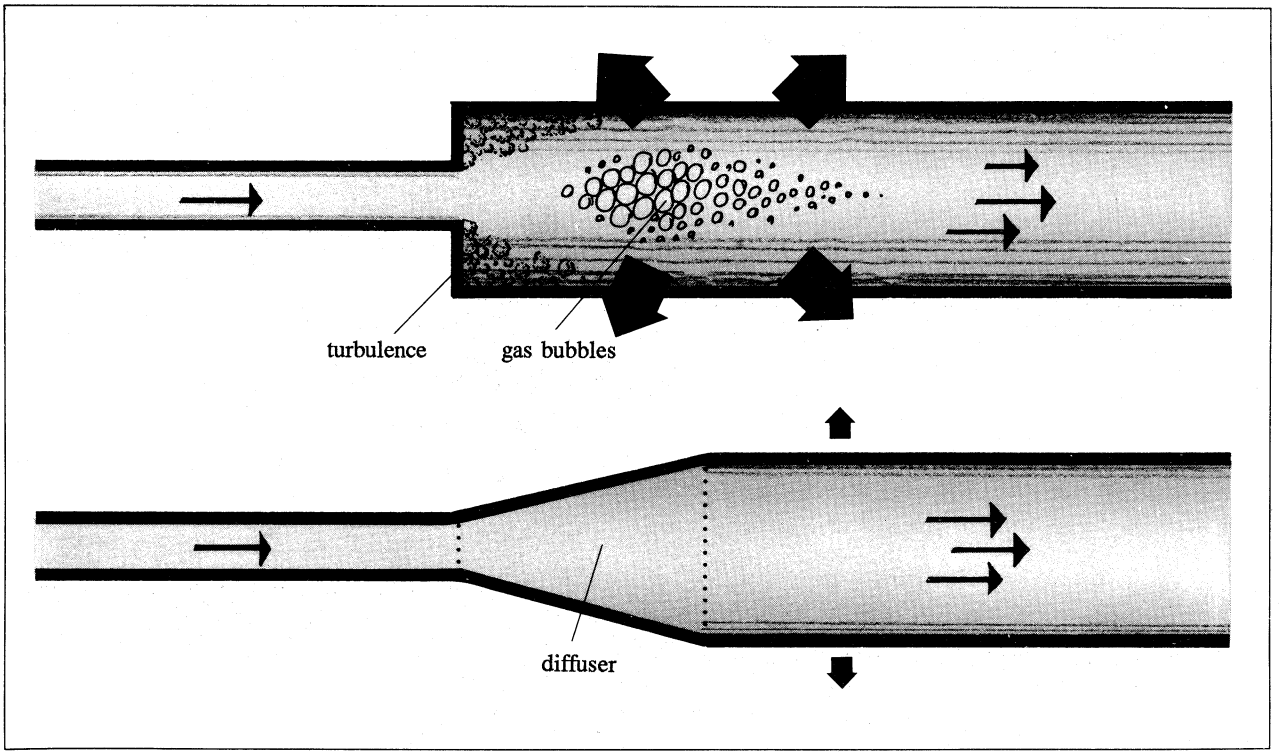
ABRUPT CHANGES IN AREA PRODUCE NOISE

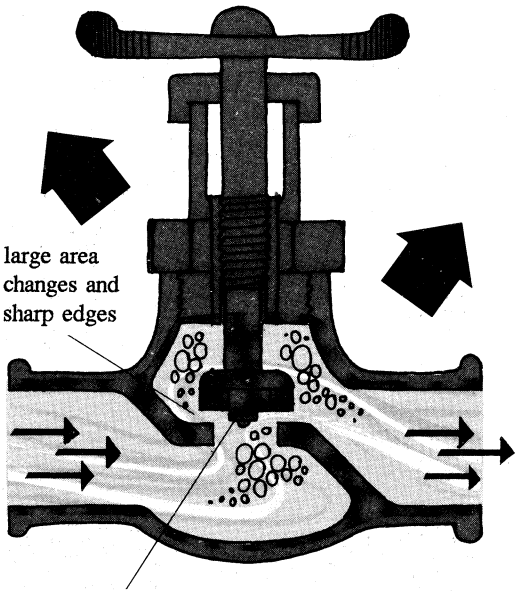
Turbulence will be created if the cross–sectional area liquid–filled pipe increases rapidly, and gas released in the form of bubbles produces a roaring sound. This sound can be reduced by avoiding rapid changes in cross–sectional area within the piping system.

Principle



Application with control valves for liquid systems

customary design of control valve



Example

Control valves in liquid systems often have small valve seats with sharp edges and twisted flow paths – resulting in high flow speeds and large pressure changes. The higher the flow speed, the more noise is produced. Air–borne sound is radiated directly by valves and pipes, and solid–borne sound is carried to structural elements nearby and far away.

Control Measure

Control valves with larger cone diameters, straighter flow paths, and more rounded edges are used.